Wireless Services Weekly

UWIN Technology Steering Committee Update

By Doug Chandler

Much thanks to John Rogers and Wasatch County for hosting the UWIN Technology Steering Committee meeting last Friday in Heber Utah. We had 23 participants representing city, county, state, and federal agencies from all over Utah. The minutes haven't been posted yet, but here are a few of the highlights:

Mobile Data: The map to the right was handed out. For larger image, Click here. The map represents the current status of the statewide deployment. There was some concern about when the Tooele valley could bring up their network on 700 MHz. Television broadcasters have still not vacated the needed spectrum, after stating they would try to be off the channels by May.

MDN Project Status

OmniLink: Phil Bates with State DPS informed the committee that OmniLink would be available in the San Juan, Grand, Logan, and Box Elder dispatch centers in the very near future. Phil also stated that training materials on the use of the OmniLink network, and possibly other technologies, could be made available through CD or Web site via new training software available through a new product DPS has purchased.
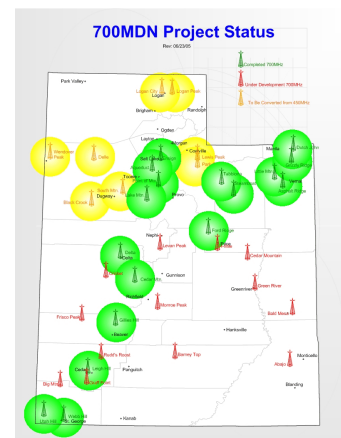
700MHz Region 41 Plan: Steve Proctor, the Region 41 Chairperson was not able to make the meeting, but Jake Hunt (UCAN Operations Manager) gave a brief update on the status of the 700MHz Region 41 Plan. The first major hurdle that must be overcome is obtaining the concurrence (permission) of the regions surrounding Utah, before we can submit the plan to the FCC. Idaho and Arizona's regions are rumored to have already approved our plan, but we haven't received this in writing yet.

Governance Board: In the UWIN Governance Board meeting held on May 12, 2005, several important issues were discussed, including the formation of a new sub-committee. It was created to investigate resources and needs. Steve Proctor (UCAN) and Jim Stewart (UEN) volunteered to serve as co-chairs. Some specific areas of interest for the sub-committee:
- Identify 'wired' resources (including fiber)
- Identify funding resources
- Status of existing high-speed wireless technologies
- Business requirements

Vendor Presentation: Jon Tait, (Motorola), gave a presentation on Motorola's fully digital "*Mobile Video Enforcer*". If you have any interest at all in mobile video, do your agency a favor and check out the Web link by clicking here. I think everyone there was quite impressed. My personal favorite feature was the pre-event recording, which allows you to capture events up to 45 seconds *before* you press the record button (auto-caching).

Mobile Video Enforcer

# Bird vs Tower
By [Boyd Webb](#), Strategic Network Planner

In the rapidly failing memories of my youth, I recall living in the good old United States of America; a land of progress and opportunity. Science in the late 1960's was only beginning to take conservation seriously. As a general rule, bird-watchers were more interested in having a red-bellied house finch sandwich, than protecting the species from pain and suffering -not that anyone intentionally wanted to burn down forests and pollute rivers, but many of us just didn't understand the problem. We were actually proud of the fact that humans were at the top of the food chain.

Fortunately for the natural world, environmentalists have put a stop to the proud arrogance of man. We are now beginning to understand the misery we humans have selfishly thrust upon an innocent world. The latest in the effort to provide safe haven for small creatures everywhere is highlighted in recent action taken by the Federal Communications Commission, intending to protect birds from dangerous communications towers.

The avian mortality issue is addressed in [WT Docket 03-187](#) which encourages debate between wireless technology providers and environmentalists. Meanwhile the FCC has apparently become more sensitive to environmental issues now that all of the engineers have been replaced with lawyers and legal staff.

Proponents of avian safety argue that man-made structures pose a serious risk to migrating birds that may inadvertently collide with towering objects during flight. Earth friendly groups such as the [American Bird Conservancy](#), have petitioned the FCC to establish new rules for construction that would limit tower height, color, lighting, and natural aesthetics. In response, the FCC commissioned a scientific study to determine actual avian mortality as a result of midair collisions with communications infrastructure.   Almost predictably, the Avatar Report came back inconclusive due to a lack of substantial scientific data.

In other words, we don't really know how many birds are killed each year due to the intentional and malicious invisibility of man made communications infrastructure, but environmental groups insist the number is around 40 million. I'm no genius, but you would certainly like to think 40 million dead birds piled tragically around communications towers across the country would be pretty hard to miss. And one wonders why man-made towers are such a problem for birds. They don't seem to hit any trees. Go figure.
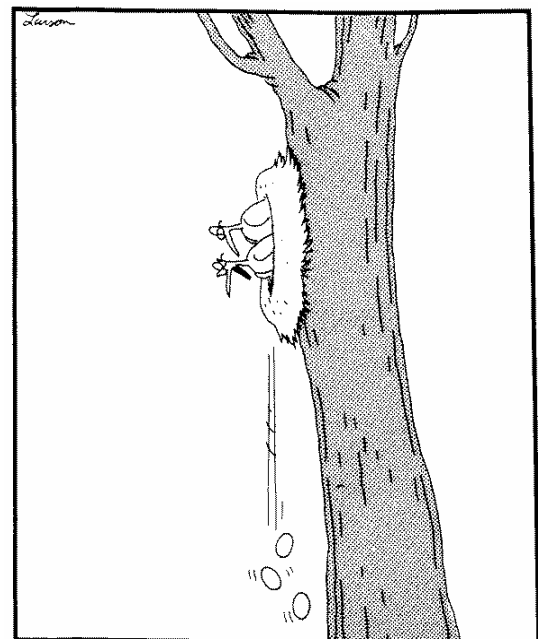
"Aaaaaaa! There goes another batch of eggs, Frank! ... No wonder this nest was such a deal."

GPS for E-911
By [Doug Chandler](#)

Most, if not all, cellular phones now have built-in Global Positioning System (GPS) chips. You may have noticed that you have an option where you can select either "911-only" or "always on". In a 911 call, your cell phone will forward your latitude/longitude to the cell site... *IF* the cellular provider's cell site and infrastructure are set-up to handle that info (most are not

there yet). The 911 dispatcher will then see your location displayed on a map...*IF* the dispatch center has a mapping software solution in operation. If you opt to have the GPS feature always on, then other applications (perhaps your own business') could make use of the lat/lon info.

When a Public Safety Answering Point (PSAP) is ready to receive 911 lat/lon info, they submit form letters to the cellular carriers that provide service in their area. The carriers have a specific amount of time to put in the infrastructure necessary to hand off lat/lon info to the PSAP. Cache and Tooele are the only ones who have done this so far, and even in their areas only one or two cellular providers are actually providing the info to the PSAP.

The cellular companies must decide how to deliver the lat/lon. They can pass on GPS info from the caller's cell phone, but if that's not available (caller doesn't have newer GPS-enabled phone, or is in a building where they can't pick up satellite), other alternatives are turned to. The most common method will probably be Time Difference of Arrival (TDOA) determination. These methods are illustrated in the graphics below. The accuracy of TDOA diminishes with the number of sites that are simultaneously receiving your phone's signal. Cellular towers usually have antenna 'arrays' that can help determine the general direction of a callers position. Note the triangular arrangement in the picture to the right. This means that there is at a minimal accuracy that can be obtained with a single tower.
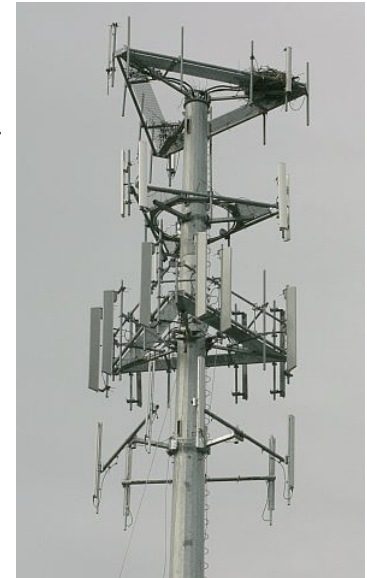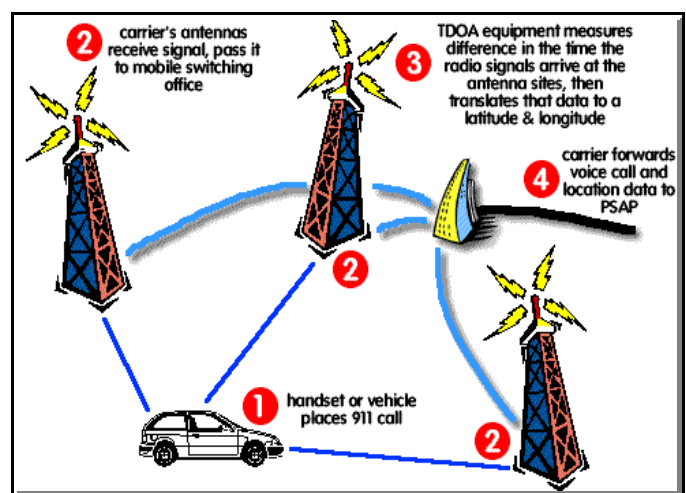
Common Cellular Tower
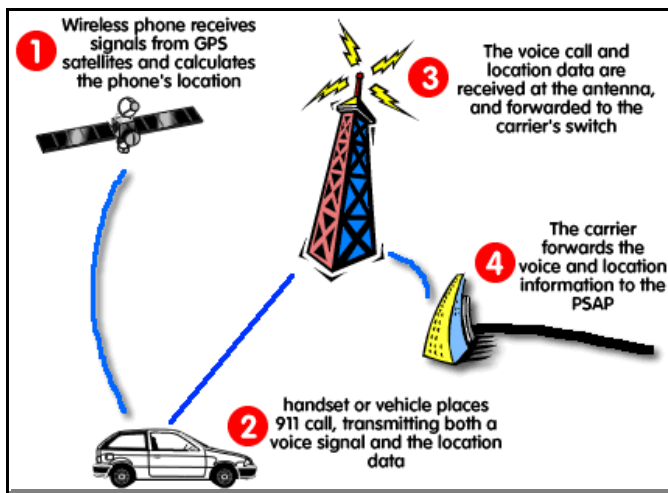
GPS Location Method
provided by 911dispatch.com

Time Difference of Arrival Method
provided by 911dispatch.com

Calendar

UCAN Meeting

Tuesday July 19, 2005
2:00 p.m. - 4:00 p.m.
Location: VECC
5360 South 5885 West
Salt Lake City

911 Committee
Thursday July 21, 2005
10:00am - Noon
Rampton Complex
4501 South 2700 West
UHP Large Conference Room

Utah Sheriff's Association 10th Annual Conference and Exposition
St. George Dixie Center
September 11-13
Conference Link